

CLAIMS

I claim:

1. A method for protecting a device against damage resulting from an electrical power fault in a double end exposed system, wherein the device is positioned in
5 a copper loop in a telecommunication network, the method comprising:
 - detecting a current in the copper loop in the double end exposed system;
 - comparing the sensed current with a threshold current associated with the device;
 - diverting the current flow from the device to an over voltage suppressor if the value of the sensed current is greater than the value of the threshold current; and
10 limiting an electrical power fault voltage that is exposed to the device using the over voltage suppressor.
2. A method according to claim 1, wherein detecting the current comprises sensing the current across a resistor coupled to the copper loop.
3. A method according to claim 1, wherein an output of the amplifier is
15 coupled to an input of the comparator.
4. A method according to claim 1, wherein the electrical power fault includes lightning exposure.
5. A method according to claim 1, wherein the electrical power fault includes an electrical power surge.
- 20 6. A method according to claim 1, wherein the device comprises a micro electrical-mechanical system (MEMS).
7. A method according to claim 1 further comprising protecting the device against voltage pulses using the over voltage suppressor.

8. A method according to claim 1 further comprising protecting the device against current pulses using the over current detector.

9. A apparatus for protecting a device against damage resulting from an electrical power fault, the device being positioned in a copper loop in a

5 telecommunication network, the apparatus comprising:

a sensing resistor for detecting a current in the copper loop in a double end exposed system;

an over current detector for detecting and comparing the sensed current with a threshold current associated with the device, wherein the over current detector diverts the
10 current flow from the device if the value of the sensed current is greater than the value of the threshold current; and

an over voltage suppressor for receiving the diverted current flow, and wherein the over voltage suppressor limits an electrical power fault voltage that is exposed to the device.

15 10. An apparatus according to claim 9, wherein the over current detector is adapted to generate a signal to trigger the over voltage suppressor.

11. An apparatus according to claim 10, wherein the over voltage suppressor comprises a zener diode coupled to a pair of transistors.

12. An apparatus according to claim 9, wherein the over current detector
20 comprises an PN junction of one of the pair of transistors.

13. An apparatus according to claim 9, wherein the over voltage suppressor is adapted to protect the device against voltage pulses.

14. A system for protecting a device against damage resulting from an

electrical power fault in a double end exposed system, wherein the device is positioned in a copper loop in a telecommunication network, the system comprising:

means for detecting a current in the copper loop in the double end exposed system;

5 means for comparing the sensed current with a threshold current associated with the device;

means for diverting the current flow from the device to an over voltage suppressor if the value of the sensed current is greater than the value of the threshold current; and

means for limiting an electrical power fault voltage that is exposed to the device
10 using the over voltage suppressor.

15. A system according to claim 14, wherein the means for detecting the current comprises an over current detector coupled to a sensing resistor on the copper loop.

16. A system according to claim 15, wherein the means for comparing the
15 sensed current with the threshold current comprises using the over current detector.

17. A system according to claim 16, wherein the over current detector is adapted to generate a signal to trigger the over voltage suppressor.

18. A system according to claim 14, wherein the over voltage suppressor comprises a zener diode coupled to a pair of transistors.

20 19. A system according to claim 14, wherein the device comprises a micro electrical-mechanical system (MEMS).